

WHAT IS CLAIMED IS:

1. A nucleic acid having a sequence of residues that is substantially the
5 same as or identical to a nucleotide sequence of at least 10 residues in length
of SEQ ID NOS:01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 21, 23, 25 or 27.

2. The nucleic acid according to Claim 1, wherein said nucleic acid has a
sequence similarity of at least about 60% with a sequence of at least 10
10 residues in length of SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 21,
23, 25 or 27.

3. A nucleic acid present in other than its natural environment that encodes
a chromo and/or fluorescent protein that has an amino acid sequence of: SEQ
15 ID NOS: 02, 04, 06, 08, 10, 12, 14, 16, 18, 20, 22, 24, 26 or 28.

4. A nucleic acid that encodes a mutant protein of a protein that has an
amino acid sequence of: SEQ ID NOS: 02, 04, 06, 08, 10, 12, 14, 16, 18, 20,
22, 24, 26 or 28.

20 5. The nucleic acid according to Claim 4, wherein said mutant protein
comprises at least one point mutation as compared to its wild type protein.

25 6. The nucleic acid according to Claim 4, wherein said mutant protein
comprises at least one deletion mutation as compared to its wild type protein.

7. A fragment of the nucleic acid selected of Claims 1 to 6.

8. An isolated nucleic acid or mimetic thereof that hybridizes under stringent
30 conditions to a nucleic acid of Claims 1 to 7.

9. A construct comprising a vector and a nucleic acid of Claims 1 to 8.

10. An expression cassette comprising:

- (a) a transcriptional initiation region functional in an expression host;
- (b) a nucleic acid selected from the group consisting of the nucleic acids of Claims 1 to 9; and
- 5 (c) and a transcriptional termination region functional in said expression host.

11. A cell, or the progeny thereof, comprising an expression cassette according to Claim 10 as part of an extrachromosomal element or integrated 10 into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

12. A method of producing a chromo and/or fluorescent protein, said method comprising:

15 growing a cell according to Claim 11, whereby said protein is expressed; and

isolating said protein substantially free of other proteins.

13. A protein or fragment thereof encoded by a nucleic acid selected from 20 the group consisting of Claims 1 to 10.

14. An antibody binding specifically to a protein according to Claim 13.

15. A transgenic cell or the progeny thereof comprising a transgene selected 25 from the group consisting of a nucleic acids according to any of Claims 1 to 10.

16. A transgenic organism capable comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 10.

30 17. In an application that employs a chromo- or fluorescent protein, the improvement comprising:

employing a protein according to Claim 13.

18. In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:
employing a nucleic acid according to Claims 1 to 10.

5 19. A kit comprising a nucleic acid according to Claims 1 to 10 and instructions for using said nucleic acid.